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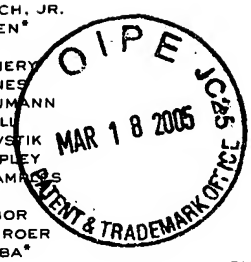

March 18, 2005

Commissioner of Patents
U.S. Patent and Trademark Office
Customer Service Window, **MS Petitions**
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Re: Petition Under 37 C.F.R. § 1.78(a)(3)
Appl. No.: 10/091,342
Filed: March 6, 2002
Title: **Process for the Preparation of L-Amino Acids with Amplification of the zwf Gene**
Inventor(s): Burke, *et al.*
Our Ref: 7601/80250

Dear Sir:

The following documents are being forwarded for appropriate action by the U.S. Patent and Trademark Office:

1. Petition Under 37 C.F.R. § 1.78(a)(3) with:
Exhibit A - a copy of the Amendment and Response to the Office Action mailed December 20, 2004 being filed concurrently herewith); and

2. Return postcard.

The Director is hereby authorized to charge the fee in the amount of $1,370.00 for the acceptance of an unintentionally delayed claim for priority to our Deposit Account No. 06-1135 under Order No. 7601/80250. The Director is also authorized to charge any fee deficiency with respect to this filing and any other fee required in connection with the present case, or credit any overpayment, to our Deposit Account No. 06-1135 under Order No. 7601/80250.

It is respectfully requested that the enclosed postcard be stamped with the date the enclosed documents are received by the PTO and that it be returned as soon as possible.

Very truly yours,

FITCH, EVEN, TABIN & FLANNERY

Michael A. Sanzo
Reg. No. 36,912
Attorney for Applicants

MAS:ct
Enclosures

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Burke, *et al.*

Appl. No.: 10/091,342

Filed: March 6, 2002

For: **Process for the Preparation of L-Amino Acids with Amplification of the zwf Gene**

Group Art Unit: 1652

Examiner: R. Prouty

Atty. Dkt. 7601/80250

Petition Under 37 C.F.R. § 1.78(a)(3)

Commissioner of Patents
U.S. Patent and Trademark Office
Customer Service Window, **MS Petition**
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

Applicants hereby request that the above-noted application be amended to claim priority to United States application 09/531,267. The '267 application was filed on March 20, 2000 and was still active at the time the above-noted application was filed, *i.e.*, March 6, 2002. At least one inventor named on the two applications is the same, and an amendment to the specification of the present application properly claiming priority to '267 has been submitted (see page 2 of the Amendment and Response Under 37 C.F.R. § 1.116 attached hereto as Exhibit A).

In accordance with 37 C.F.R. § 1.78(a)(3)(iii), Applicants hereby state that the entire delay between the date the claimed priority was due under 1.78(a)(2)(ii) and the date of the filing of the present petition was unintentional.

The Director is hereby authorized to charge Applicants' Deposit Account No. 06-1135 for the fee required under 37 C.F.R. § 1.17(t) and for any other fees that may be required with respect to the present Petition.

If a phone call may help to expedite this matter, the Examiner is invited to call Applicants' undersigned attorney at (202) 419-7013.

Respectfully submitted,

FITCH, EVEN, TABIN & FLANNERY

By: Michael A. Sanzo

Michael A. Sanzo
Reg. No. 36,912
Attorney for Applicants

Date: March 18, 2005

1801 K St., NW, Suite 401L
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(202)419-7013

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Burke, *et al.*

Appl. No.: 10/091,342

Filed: March 6, 2002

For: **Process for the Preparation of L-Amino Acids with Amplification of the zwf Gene**

Group Art Unit: 1652

Examiner: R. Prouty

Atty. Dkt. 7601/80250

Amendment and Response Under 37 C.F.R. § 1.116

Commissioner of Patents
U.S. Patent and Trademark Office
Customer Service Window, **MS RCE**
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

In response to the Office Action dated December 20, 2004, Applicants respectfully request reconsideration of the above-captioned application in view of the following amendments and remarks.

Amendments to the Specification begin on page 2 of the present document.

Amendments to the Claims begin on page 3 of the present document.

Remarks/Arguments begin on page 8 of the present document.

Amendments to the Specification

On page 1 of the application, please amend paragraph [0001] to read as follows:

[0001] ~~This~~ The present application is a continuation-in-part of U.S. Application No. 09/531,269, filed March 20, 2000, the contents of which are incorporated by reference herein in their entirety. The present application is also a continuation-in-part of U.S. Application No. 09/531,267, filed on March 20, 2000, which claims the benefit of U.S. provisional application 60/142,915, filed on July 9, 1999.

Amendments to the Claims

Please cancel claims 1-16 without prejudice. Please amend claims 17 and 24 as shown below in the List of Claims.

List of Claims

1-16. Cancelled.

17. (Currently amended) A process for the preparation of L-lysine, comprising:

a) fermenting an L-lysine-producing bacterium of the species *Corynebacterium glutamicum* in a culture medium, wherein:

i) said bacterium comprises a vector encoding the Zwischenferment (ZWF) enzyme of either SEQ ID NO:8 or SEQ ID NO:10 ~~is overexpressed in said bacterium~~ said vector being either extrachromosomal or integrated into the bacterial chromosome;

ii) the ~~activity of the~~ pyruvate oxidase (poxB) ~~enzyme of SEQ ID NO:5~~ gene of SEQ ID NO:4 ~~is either decreased or eliminated~~ in said bacterium comprises an inactivating disruption in its sequence;

b) concentrating L-lysine in either said culture medium or said bacterium of step a); and

c) isolating the L-lysine concentrated in step b).

18. (Previously presented) The process of claim 17, wherein said bacterium overexpresses the ZWF enzyme of SEQ ID NO:10.

19. (Previously presented) The process of either claim 17 or claim 18, wherein said bacterium has been transformed with a vector comprising a promoter and encoding the protein of either SEQ ID NO:8 or SEQ ID NO:10.

20. (Previously presented) A process for the preparation of L-lysine, comprising:

a) fermenting an L-lysine-producing bacterium of the species *Corynebacterium glutamicum* in a culture medium, wherein:

i) said bacterium has been transformed with a vector comprising a promoter and encoding the protein of either SEQ ID NO:8 or SEQ ID NO:10;

ii) the poxB gene in said bacterium (SEQ ID NO:4) has been disrupted by integration mutagenesis; and

b) collecting L-lysine from either said culture medium or said bacterium of step a).

21. (Previously presented) The method of claim 20, wherein said bacterium has been transformed with a vector comprising a promoter and encoding the protein of SEQ ID NO:10.

22. (Previously presented) The method of either claim 20 or claim 21, further comprising isolating said L-lysine from either said culture medium or said bacterium collected in step b).

23. (Previously presented) The method of either claim 20 or claim 21, wherein said integration mutagenesis of said poxB gene is accomplished by transforming said bacterium with the plasmid pCR2.1poxBint, deposited as DSM 13114.

24. (Currently amended) A process for the preparation of an L-amino acid selected from the group consisting of: L-threonine; L-isoleucine; and L-tryptophan; comprising:

a) fermenting a bacterium that produces said L-amino acid in a culture medium, wherein said bacterium is of the species *Corynebacterium glutamicum*, and wherein:

i) said bacterium comprises a vector encoding the ZWF enzyme of either SEQ ID NO:8 or SEQ ID NO:10 ~~is overexpressed in said bacterium~~ said vector being either extrachromosomal or integrated into the bacterial chromosome;

ii) the ~~activity of the~~ pyruvate oxidase (poxB) ~~enzyme of SEQ ID NO:5~~ gene of SEQ ID NO:4 ~~is either decreased or eliminated~~ in said bacterium comprises an inactivating disruption in its sequence;

b) concentrating said L-amino acid in either said culture medium or said bacterium of step a); and

c) isolating the L-amino acid concentrated in step b).

25. (Previously presented) The process of claim 24, wherein said bacterium overexpresses the ZWF enzyme of SEQ ID NO:10.

26. (Previously presented) The process of claim 24, wherein said bacterium has been transformed with a vector comprising a promoter and encoding the protein of either SEQ ID NO:8 or SEQ ID NO:10.

27. (Previously presented) The process of any one of claims 24-26, wherein said L-amino acid is L-threonine.

28. (Previously presented) The process of any one of claims 24-26, wherein said L-amino acid is L-isoleucine.

29. (Previously presented) The process of any one of claims 24-26, wherein said L-amino acid is L-tryptophan.

30. (Previously presented) A process for the preparation of an L-amino acid selected from the group consisting of: L-threonine; L-isoleucine; and L-tryptophan; comprising:

a) fermenting a bacterium that produces said L-amino acid in a culture medium, wherein said bacterium is of the species *Corynebacterium glutamicum*, and wherein:

i) said bacterium has been transformed with a vector comprising a promoter and encoding the protein of either SEQ ID NO:8 or SEQ ID NO:10;

ii) the poxB gene (SEQ ID NO:4) in said bacterium has been disrupted by integration mutagenesis; and

b) collecting said L-amino acid from either said culture medium or said bacterium of step a).

31. (Previously presented) The process of claim 30, wherein said bacterium has been transformed with a vector comprising a promoter and encoding the protein of SEQ ID NO:10.

32. (Previously presented) The process of claim 30, further comprising isolating said L-amino acid from either said culture medium or said bacterium collected in step b).

33. (Previously presented) The process of claim 30, wherein said integration mutagenesis is accomplished by transforming said bacterium with the plasmid pCR2.1poxBint, deposited as DSM 13114.

34. (Previously presented) The process of any one of claims 30-33, wherein said L-amino acid is L-threonine.

35. (Previously presented) The process of any one of claims 30-33, wherein said L-amino acid is L-isoleucine.

36. (Previously presented) The process of any one of claims 30-33, wherein said L-amino acid is L-tryptophan.

Remarks

I. Status of the Application and Claims

As originally filed, the present application had a total of 16 claims. All of these were cancelled in previous prosecution and new claims 17-36 were added. Claims 17 and 24 have been amended herein.

II. The Amendments

Claims 17 and 24 were amended to specify that bacteria used in the production of amino acids contain a vector that encodes the zwf enzyme of SEQ ID NO:8 or SEQ ID NO:10 that is either maintained extrachromosomally or integrated into the bacterial genome. The Examiner suggests on page 4 of the Office Action that claims are enabled with respect to bacteria transformed with a nucleic acid encoding the zwf protein of SEQ ID NO:9 or SEQ ID NO:10. Applicants believe that the amendment that has been made is in compliance with this suggestion, but expresses limitations in terms of the state of the bacteria rather than in terms of a process. In other words, when a bacterium is transformed with a nucleic acid encoding a protein, a vector will be transferred into the bacterium and either be incorporated into its genome or be maintained as a distinct entity.

Claims have also been amended to indicate that bacteria include a poxB gene that includes an inactivating disruption. This amendment was also made in an attempt to comply with a suggestion of the Examiner appearing on page 4 of the Office Action. In this case, the Examiner indicates that claims are enabled for bacteria having an inactivating deletion of the poxB gene. The word "disruption," rather than "deletion," was used to indicate that gene activity can be eliminated not only by deleting sequences, but also by the integration of additional nucleotides, *e.g.*, nucleotides encoding a stop codon.

In addition to the amendments to the claims described above, the specification was amended to cross-reference additional applications that Applicants would like to claim priority to. Since the changes have come after the required time period, Applicants are

concurrently submitting a Petition Under 37 C.F.R. § 1.78(a)(3) to the Office of Petitions. (A copy of the petition is enclosed as Exhibit A.)

None of the amendments described above add new matter to the application, and their entry is therefore respectfully requested.

The Rejections

I. Rejection of Claims Under 35 U.S.C. § 112, First Paragraph

On pages 2-6 of the Office Action, the Examiner rejects claims 17-19 and 24-29 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner alleges that *Corynebacterium glutamicum* bacteria in which the activity of the poxB gene has been reduced or eliminated constitutes a large and variable genus. It is further argued that Applicants have not provided an adequate description or enabled this full genus.

Applicants respectfully disagree with the Examiner's characterization and believe that the term "genus" is being used inappropriately to refer to the process by which bacteria are made rather than the bacteria themselves. Nevertheless, in an effort to advance the prosecution of the present case, Applicants have amended claims 17 and 24 in a manner that they believe should be in accord with what the Examiner implies is patentable. Specifically, the claims are now limited to bacteria that have incorporated a vector encoding the zwf enzyme of either SEQ ID NO:8 or SEQ ID NO:10 and in which the poxB gene of SEQ ID NO:4 has been disrupted. In light of these amendments, Applicants believe that the Examiner's rejection has been overcome, and it is respectfully requested that this rejection be withdrawn.

II. Rejection of Claims Under 35 U.S.C. § 103

On pages 6-9 of the Office Action, the Examiner rejects claims 17-36 under 35 U.S.C. §103 as being unpatentable over the combination of Dunican, *et al.* (WO 01/004322, hereinafter the '322 reference) in view of Möckel, *et al.* (EP 1 096 013, hereinafter the '013

reference) and JP 09-244661 (hereinafter the '661 reference). The Examiner points out on page 8 that the '322 and '013 references were published after the filing date of Applicants' parent application (09/531,269), but alleges that the prior application does not support zwf genes encoding proteins of SEQ ID NOs:8 and 10.

In response, Applicants have filed a petition requesting that they be granted priority to a United States counterpart of the '322 reference, *i.e.*, the reference by Dunican (also an inventor named on the present application). In this regard, it should be noted that '322 claims priority to United States application 09/531,267, filed on March 20, 2000, and to United States provisional application 60/142,915, filed on July 9, 1999. The '267 application discloses all of the sequence information in the '322 reference and, in fact, appears to be essentially identical. To aid the Examiner in comparing the applications, Applicants are enclosing herewith a copy of the '267 application as Exhibit B.[1] Patent Office records should provide additional information with regard to filing date, inventorship, etc.

Applicants believe that all of the essential elements needed to claim priority are present. First, the present application and '267 have at least one inventor in common. Although the '267 application was eventually abandoned,[2] at the time that the present application was filed, *i.e.*, March 6, 2002, '267 was still active and, therefore, the requirement of co-pendancy at the time of filing was met.

The only other requirement for Applicants to claim priority is that a statement must appear in the present application requesting such priority and stating the relationship of the applications. This was not in the present application as filed or submitted within the time frame required by the patent rules. However, 37 C.F.R. § 1.78(a)(3) provides that an applicant may request priority after the required time period, provided that: a) the application is amended to properly cite the application relied upon for priority; b) the requirements of continuity are met; c) a petition is filed along with a required fee; and d) the failure to

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[1] The '267 application was initially filed in German. Exhibit B is an English language translation.

[2] The application was abandoned in favor of a continuation-in-part (application 10/137,665, filed May 3, 2002), which eventually issued as U.S. patent 6,825,029.

originally claim priority was unintentional. Applicants have filed the necessary petition herein. Upon its granting, Applicants do not believe that the '322 reference can be used in rejecting claims under § 103. Since this reference is essential to the rejection, Applicants submit that the rejection cannot be maintained and respectfully request that it be withdrawn.

Conclusion

In light of the amendments and discussion above, Applicants believe that all of the Examiner's rejections have been overcome. It is therefore respectfully requested that these rejections be withdrawn and that the claims presently pending in the application be allowed.

If, in the opinion of the Examiner, a phone call may help to expedite the prosecution of this application, the Examiner is invited to call Applicants' undersigned attorney at (202) 419-7013.

Respectfully submitted,

FITCH, EVEN, TABIN & FLANNERY

By: Michael A. Sanzo

Michael A. Sanzo
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Date: March 18, 2005

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